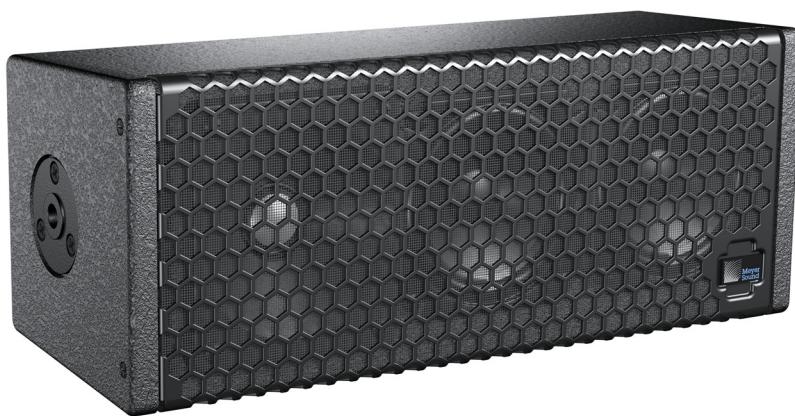


UP-4XP™ UltraCompact Loudspeaker



*Keep these important operating instructions.
Check www.meyersound.com for updates.*

DECLARATION OF CONFORMITY ACCORDING TO ISO/IEC GUIDE 22 AND EN 45014

Manufacturer's Name: Meyer Sound Laboratories Inc.

Manufacturer's Address: 2832 San Pablo Avenue
Berkeley, CA 94702-2204, USA

Declares that the product:

Product Names: UP-4XP UltraCompact Loudspeaker

Product Options: All

Conforms to the following Product Specifications:

Safety: EN 60065:2002

Supplementary Information: The product herewith complies with the requirements of the Low Voltage Directive (LVD) 2006/95/EC.

Signature:



Ms. Margie Garza
Director of Quality
Meyer Sound Laboratories Inc.
Berkeley, California 94702 USA
Issued July 26, 2010

European Contact:

Your local Meyer Sound dealer or
Meyer Sound Germany, GmbH.

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UP-4XP Operating Instructions, PN 05.201.005.01 A2

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SYMBOLS USED

These symbols indicate important safety or operating features in this booklet and on the chassis:

			
Dangerous voltages: risk of electric shock	Important operating instructions	Frame or chassis	Protective earth ground
Pour indiquer les risques résultant de tensions dangereuses	Pour indiquer important instructions	Masse, châssis	Terre de protection
Warnung vor gefährlicher elektrischer Spannung	Wichtige Betriebsanweisung oder Gebrauchsanleitung	Rahmen oder Gehäuse	Masse Schutzleiter
Para indicar voltajes peligrosos	Instrucciones importantes de funcionamiento y/o mantenimiento	Armadura o chassis	Tierra protección

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this loudspeaker near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with Meyer Sound's installation instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the loudspeaker. The AC mains plug or appliance coupler shall remain readily accessible for operation.
11. Only use attachments/accessories specified by Meyer Sound.
12. If applicable, use only with the caster rails or rigging specified by Meyer Sound, or sold with the loudspeaker. Handles are for carrying only.

 **CAUTION:** Rigging should only be done by experienced professionals.

13. Unplug this loudspeaker during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the loudspeaker has been damaged in any way, such as when the power-supply cord or plug has been damaged; liquid has been spilled or objects have fallen into the loudspeaker; rain or moisture has entered the loudspeaker; the loudspeaker has been dropped; or when for undetermined reasons the loudspeaker does not operate normally.

SAFETY SUMMARY

English

- To reduce the risk of electric shock, disconnect the loudspeaker from the AC mains before installing audio cable. Reconnect the power cord only after making all signal connections.
- Connect the loudspeaker to a two-pole, three-wire grounding mains receptacle. The receptacle must be connected to a fuse or circuit breaker. Connection to any other type of receptacle poses a shock hazard and may violate local electrical codes.
- Do not install the loudspeaker in wet or humid locations without using weather protection equipment from Meyer Sound.
- Do not allow water or any foreign object to get inside the loudspeaker. Do not put objects containing liquid on or near the unit.
- To reduce the risk of overheating the loudspeaker, avoid exposing it to direct sunlight. Do not install the unit near heat-emitting appliances, such as a room heater or stove.
- This loudspeaker contains potentially hazardous voltages. Do not attempt to disassemble the unit. The unit contains no user-serviceable parts. Repairs should be performed only by factory-trained service personnel.

Français

- Pour réduire le risque d'électrocution, débrancher la prise principale de l'enceinte, avant d'installer le câble d'interface allant à l'audio. Ne rebrancher le bloc d'alimentation qu'après avoir effectué toutes les connections.
- Branchez l'enceinte dans une prise de courant à 3 dérivations (deux pôles et la terre). Cette prise doit être munie d'une protection adéquate (fusible ou coupe-circuit). Le branchement dans tout autre genre de prise pourrait entraîner un risque d'électrocution et peut constituer une infraction à la réglementation locale concernant les installations électriques.

- Ne pas installer l'enceinte dans un endroit où il y a de l'eau ou une humidité excessive.
- Ne pas laisser de l'eau ou tout objet pénétrer dans l'enceinte. Ne pas placer de récipients contenant un liquide sur cet appareil, ni à proximité de celui-ci.
- Pour éviter une surchauffe de l'enceinte, la conserver à l'abri du soleil. Ne pas installer à proximité d'appareils dégagant de la chaleur tels que radiateurs ou appareils de chauffage.
- Ce haut-parleur contient des circuits haute tension présentant un danger. Ne jamais essayer de le démonter. Il n'y a aucun composant qui puisse être réparé par l'utilisateur. Toutes les réparations doivent être effectuées par du personnel qualifié et agréé par le constructeur.

Deutsch

- Um die Gefahr eines elektrischen Schlaganfalls auf ein Minimum zu reduzieren, den Lautsprecher vom Stromnetz trennen, bevor ggf. ein Audio-Schnittstellensignalkabel angeschlossen wird. Das Netzkabel erst nach Herstellung aller Signalverbindungen wieder einstecken.
- Der Lautsprecher an eine geerdete zweipolige Dreiphasen-Netzsteckdose anschließen. Die Steckdose muß mit einem geeigneten Abzweigschutz (Sicherung oder Leistungsschalter) verbunden sein. Der Anschluß der unterbrechungsfreien Stromversorgung an einen anderen Steckdosentyp kann zu Stromschlägen führen und gegen die örtlichen Vorschriften verstößen.
- Der Lautsprecher nicht an einem Ort aufstellen, an dem sie mit Wasser oder übermäßig hoher Luftfeuchtigkeit in Berührung kommen könnte.
- Darauf achten, daß weder Wasser noch Fremdkörper in das Innere des Lautsprechers eindringen. Keine Objekte, die Flüssigkeit enthalten, auf oder neben die unterbrechungsfreie Stromversorgung stellen.

- Um ein Überhitzen dem Lautsprecher zu verhindern, das Gerät vor direkter Sonneneinstrahlung fernhalten und nicht in der Nähe von wärmeabstrahlenden
- Haushaltsgeräten (z.B. Heizgerät oder Herd) aufstellen.
- Im Inneren dieses Lautsprecher herrschen potentiell gefährliche Spannungen. Nicht versuchen, das Gerät zu öffnen. Es enthält keine vom Benutzer reparierbaren Teile. Reparaturen dürfen nur von ausgebildetem Kundendienstpersonal durchgeführt werden.

Español

- Para reducir el riesgo de descarga eléctrica, desconecte de la red de voltaje el altavoz antes de instalar el cable de señal de audio. Vuelva a conectar la alimentación de voltaje una vez efectuadas todas las interconexiones de señalización de audio.
- Conecte el altavoz a un tomacorriente bipolar y trifilar con neutro de puesta a tierra. El tomacorriente debe estar conectado a la protección de derivación apropiada (ya sea un fusible o un disyuntor). La conexión a cualquier otro tipo de tomacorriente puede constituir peligro de descarga eléctrica y violar los códigos eléctricos locales.
- No instale el altavoz en lugares donde haya agua o humedad excesiva.
- No deje que en el altavoz entre agua ni ningún objeto extraño. No ponga objetos con líquidos encima de la unidad ni cerca de ella.
- Para reducir el riesgo de sobrecalentamiento, no exponga la unidad a los rayos directos del sol ni la instale cerca de artefactos que emiten calor, como estufas o cocinas.
- Este altavoz contiene niveles de voltaje peligrosos en potencia. No intente desarmar la unidad, pues no contiene piezas que puedan ser reparadas por el usuario. Las reparaciones deben efectuarse únicamente por parte del personal de mantenimiento capacitado en la fábrica.

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CHAPTER 1: INTRODUCTION

HOW TO USE THIS MANUAL

Make sure to read these operating instructions in their entirety before configuring a loudspeaker system with UP-4XPs. In particular, pay close attention to material related to safety issues.

As you read these operating instructions, you will encounter the following icons for notes, tips, and cautions:



NOTE: A note identifies an important or useful piece of information relating to the topic under discussion.



TIP: A tip offers a helpful tip relevant to the topic at hand.



CAUTION: A caution gives notice that an action may have serious consequences and could cause harm to equipment or personnel, or could cause delays or other problems.

Information and specifications are subject to change. Updates and supplementary information are available at www.meyersound.com.

Meyer Sound Technical Support is available at:

- **Tel:** +1 510 486.1166
- **Tel:** +1 510 486.0657 (after hours support)
- **Web:** www.meyersound.com/support
- **Email:** techsupport@meyersound.com

UP-4XP ULTRACOMPACT LOUDSPEAKER

The UP-4XP ultracompact loudspeaker is ideally suited for applications requiring a small, inconspicuous cabinet that also delivers high sound pressure levels, low distortion, and uniform directional control. The self-powered UP-4XP offers exceptional audio performance in a compact package with the advantages of a remote power supply. As a standalone loudspeaker, the UP-4XP can be used for vocal reinforcement, frontfill coverage, and delay coverage for under-balcony applications. The UP-4XP can also be paired with an optional subwoofer to create a full-range system.



UP-4XP UltraCompact Loudspeaker

The UP-4XP boasts a wide operating frequency range of 66 Hz to 18 kHz and a maximum peak SPL of 121 dB, with very low distortion. The unit's high-frequency section includes a 1-inch metal dome tweeter on a constant-directivity, high-frequency horn with a 100-degree beamwidth. The low/mid-frequency section includes two 4-inch cone transducers that work in parallel at low frequencies — delivering a combined acoustic output — with one of the drivers rolling off at higher frequencies to prevent interference (due to comb filtering effects) in the crossover region. The proprietary UP-4XP drivers, which are manufactured at Meyer Sound's factory in Berkeley, California, are powered by three channels of onboard power amplification that include an active crossover, driver protection, and frequency and phase correction circuitry.

The UP-4XP is available with either a Phoenix™ 5-pin male or sealed SwitchCraft® EN3™ male connector for receiving balanced audio and DC power. Powering the unit from an external source eliminates the need for wiring conduits while still preserving the advantages of self-powered systems. The UP-4XP's amplifier and signal-processing circuits are designed to store DC power and tolerate voltage drops, thereby accommodating light-gauge cables and lengthy cable runs.

UP-4XP loudspeaker systems require a 48 V DC external power supply, such as Meyer Sound's MPS-488HP. The single-space 19-inch rack unit receives eight channels of balanced audio from its XLR female Channel Inputs and routes the audio, along with 48 V of DC power, to its eight Channel Outputs. The Channel Outputs, which are available as either Phoenix 5-pin male connectors or SwitchCraft EN3 5-pin female connectors, can deliver DC power to up to eight UP-4XP loudspeakers.

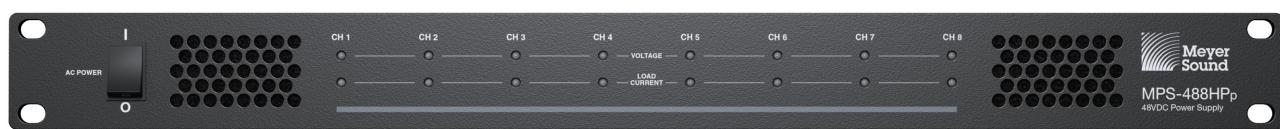
Cable lengths up to 150 feet for DC power are possible when using 18-AWG wire, with just 1 dB of loss in peak SPL. Longer cable runs are possible for moderate applications that don't drive the loudspeakers to maximum output, or for installations with heavier wire gauges. The use of composite

multiconductor cables (such as Belden® 1502 or equivalent) allows a single cable to carry both DC power and balanced audio to the UP-4XPs.

 **TIP:** For complete information on using the MPS-488HP external power supply, refer to the *MPS-488HP Operating Instructions*.

 **NOTE:** The MPS-488HP external power supply replaces the MPS-488 model, which was originally designed for use with MM-4XP loudspeakers. The MPS-488 is also compatible with UP-4XP loudspeakers and can drive up to four units (using every other Channel Output).

The UP-4XP's durable cabinet is coated with a black textured finish and includes top and bottom mounting plates with 3/8-16 or metric M10 threads. QuickFly mounting options include the MUB-UP4 U-bracket, MYA-UP4 cradle-style yoke, and 1 3/8-inch (35 mm) diameter pole-mount adaptor. Other UP-4XP options include weather protection (with the sealed EN3 connector) and custom color finishes for installations and applications with specific cosmetic



MPS-488HP Power Supply



MYA-UP4 Cradle-Style Yoke



UP-4XP with MSA-UPM Pole-Mount Adapter



MUB-UP4 U-Bracket in Wall Mount Configuration



MUB-UP4 U-Bracket in Ceiling Mount Configuration

CHAPTER 2: UP-4XP LOUDSPEAKER

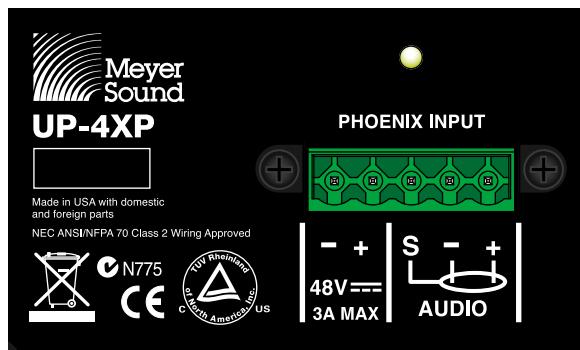
The UP-4XP is powered by an external 48 V DC power supply, eliminating the need for wiring conduits while still preserving the advantages of self-powered loudspeaker systems. The unit's onboard amplifier and signal-processing circuits were designed to store DC power and tolerate voltage drops, thereby accommodating light-gauge cables and lengthy cable runs.



UP-4XP Rear Panel

UP-4XP INPUT CONNECTOR

The UP-4XP loudspeaker is available with either a Phoenix 5-pin male or SwitchCraft EN3 5-pin male connector for receiving DC power and balanced audio. The EN3 connector is ideal for outdoor, all-weather use. The input connector's five pins include two for DC power (negative and positive) and three for balanced audio (shield, negative, and positive). These pins are clearly labeled on the UP-4XP rear panel. To function properly, the UP-4XP requires 48 V of DC power.



UP-4XP with Phoenix 5-Pin Male Connector



UP-4XP with EN3 5-Pin Male Connector

Depending on the loudspeaker's connector, the UP-4XP ships with either a single Phoenix cable mount connector or a 10-foot (3 meter) EN3-to-pigtail cable for constructing loudspeaker cables. For information on UP-4XP cable requirements, see "UP-4XP Current Draw and Cable Requirements" on page 13. For information on cables and cable accessories available from Meyer Sound, see Appendix A, "UP-4XP Accessories." For information on cable assembly, see Appendix B, "Phoenix and EN3 Cable Assembly."

 **CAUTION:** When wiring UP-4XP loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the UP-4XP loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

UP-4XP LED

The UP-4XP has a three-color LED on its rear panel that changes color to indicate the loudspeaker's status.

Powering On (Green)

When powering up the UP-4XP loudspeaker, the following startup events occur and are indicated by the LED:

1. The LED flashes multiple colors during power-up sequence.
2. After a pause, the LED turns solid green, indicating the power-up sequence has completed and the loudspeaker is ready to reproduce audio.

 **CAUTION:** If after the power-up sequence the LED does not turn solid green (instead flashes multiple colors or stays solid red) and the UP-4XP does not output audio, the loudspeaker has encountered an error and may need to be serviced. Contact Meyer Sound Technical Support.

 **CAUTION:** If after the power-up sequence (or during operating) the LED turns solid red and the loudspeaker continues to output audio, the loudspeaker's voltage may have dropped below 25 V DC. When encountering these conditions, operation of the loudspeaker should cease and its power supply and cabling should be verified.

Limiting (Yellow)

The UP-4XP LED turns yellow to indicate limiting. When the LED is solid yellow, limiting is engaged for the high-frequency channel. When the LED flashes yellow (on and off), limiting is engaged for the low-frequency channels. When limiting is engaged for a channel, its gain is reduced. When engaged, the limiter protects the loudspeaker's drivers and prevents signal peaks from causing excessive distortion in the loudspeaker's amplifier, thereby preserving headroom and maintaining smooth frequency responses at high levels. When source levels return to normal, below the limiter's threshold, the LED turns green and limiting ceases.

The UP-4XP performs within its acoustical specifications at normal temperatures when the UP-4XP LED is green, or when limiting is not continuous. If limiting activity is continuous, the loudspeaker is nearing the limits of its operating capabilities where:

- Increases to the input level have no effect.
- Distortion increases due to clipping and nonlinear driver operation.
- The drivers are subjected to excessive heat and excursion, which will compromise their life span and may eventually lead to damage over time.



CAUTION: The UP-4XP LED turns yellow when the loudspeaker's signal rises 2 dB above the limiting threshold, and indicates a safe, optimum level has been exceeded. If the UP-4XP loudspeakers in a system begin to limit before reaching the desired SPL, consider adding more loudspeakers to the system to achieve the desired SPL without exposing the loudspeakers to excessive levels and possible overheating.

UP-4XP Temperature and Limiting

The UP-4XP LED turns solid yellow when its heat sink temperature reaches 65° C (145° F), indicating the unit is reaching its maximum heat dissipation and a reduction in SPL is recommended. While the UP-4XP will continue to operate while the LED is yellow, the limiter threshold is lowered to a safe level (causing the output level to be lowered by 3 dB) to prevent the loudspeaker from overheating. When the temperature of the heat sink cools to 50°C (122°F), the LED changes from yellow to green and the limiter threshold returns to normal.

Clipping (Red)

The UP-4XP turns red when the loudspeaker's input stage clips, causing the amplifier to overload. When the LED is red, the source level should be reduced.



CAUTION: If the UP-4XP LED turns solid red and the loudspeaker continues to output audio, though at reduced levels, the loudspeaker's voltage may have dropped below 25 V DC. When these conditions are encountered, operation of the loudspeaker should cease and its power supply and cabling should be verified.

UP-4XP CURRENT DRAW AND CABLE REQUIREMENTS

Each UP-4XP loudspeaker draws a maximum current of 4.05 A continuous and 4.50 A peak from its external 48 V DC power supply. The current draw for the UP-4XP is dynamic and fluctuates as operating levels change. The cabling between the UP-4XP and its external power supply adds resistance and hence causes a voltage drop at the loudspeaker. Because lower DC voltages compromise amplifier performance (peak SPL), and in some cases frequency response, cable resistance should be kept to a minimum.



NOTE: For long cable runs, you can use a large cable gauge for DC power and a separate balanced audio cable for audio. For more information, see "Long Cable Runs with Separate Cable for DC Power and Audio" on page 14.

Cable Lengths and Cable Gauges for UP-4XP Loudspeakers

Cable lengths up to 150 feet between the UP-4XP and its external power supply are supported with only 1 dB of peak SPL loss using 18 AWG wire. Longer cable lengths are possible with heavier wire gauges (see Table 1 and Table 2).

Table 1: UP-4XP Loudspeaker Cable Lengths (AWG)

Cable Gauge	Resistance (Ω/ft)	Approximate Max. Length
12 AWG	0.0016	600 ft
14 AWG	0.00253	375 ft
16 AWG	0.00402	237 ft
18 AWG	0.00636	150 ft
20 AWG	0.01008	87 ft

Table 2: UP-4XP Loudspeaker Cable Lengths (European)

Cable Gauge	Resistance (Ω/m)	Approximate Max. Length
2.50 mm ²	0.0052	157 m
1.50 mm ²	0.01076	87 m
1.00 mm ²	0.02087	45 m
0.75 mm ²	0.03307	27 m



NOTE: The total cable resistance between the UP-4XP and its external power supply should not exceed 2 ohms.

Calculating the Maximum Cable Length

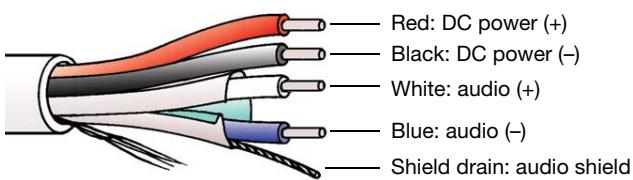
The maximum cable length for a UP-4XP can be calculated with the following formula:

$$\text{maximum length} = 2 \text{ ohms} / 2 * \text{cable resistance}$$

For example, the maximum length of an 18 AWG cable with a resistance of 0.00636 is 157.2 feet ($2 / 2 * 0.00636$).

WIRING UP-4XP LOUDSPEAKER CABLES WITH BELDEN 1502 CABLE (OR EQUIVALENT)

The most convenient method of wiring UP-4XP loudspeaker cables is with a multiconductor cable such as Belden 1502, which has dedicated conductors for DC power and balanced audio in a single jacket. When wiring UP-4XP loudspeaker cables with Belden 1502, use the conventions in Table 3. The red and black wires are 18 AWG, thicker than the other three wires, and should be used for DC power (cable lengths up to 150 feet are possible with just 1 dB of peak SPL loss). The blue, white, and shield drain wires are shielded together and should be used for audio.



Belden 1502 Composite Cable

Table 3: Wiring UP-4XP Loudspeaker Cables with Belden 1502

Wire	Signal	Gauge
Red	DC power, positive (+)	18 AWG
Black	DC power, negative (-)	18 AWG
White	Balanced audio, positive (+)	22 AWG
Blue	Balanced audio, negative (-)	22 AWG
Shield drain	Balanced audio, shield	24 AWG

CAUTION: When wiring UP-4XP loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the UP-4XP loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

Wiring EN3-to-Pigtail Cables

UP-4XP loudspeakers equipped with EN3 connectors are shipped with one EN3 5-pin female-to-pigtail cable. The EN3 end of the cable connects directly to the UP-4XP input connector. The pigtail end of the cable, which connects to the loudspeaker's external power supply, can be terminated with either an EN3 5-pin male connector (included with the MPS-488HPe) or Phoenix 5-pin female connector (included

with the MPS-488HPp). The pigtail can also be spliced to a longer loudspeaker cable or to a junction box. The included EN3-to-pigtail cable uses Belden 1502 cable (or equivalent), which can be wired for both DC power and balanced audio. The EN3-to-pigtail cable is available in plenum or regular (non-plenum) versions.

 **NOTE:** For a complete list of cables and cable connectors available from Meyer Sound that can be used with the UP-4XP loudspeaker, see Appendix A, "UP-4XP Accessories."

LONG CABLE RUNS WITH SEPARATE CABLE FOR DC POWER AND AUDIO

For installations where Belden 1502 is not feasible, or for installations that require cable runs longer than 150 feet, you can use separate cables for DC power and balanced audio: a large-gauge cable for DC and a high-quality, balanced audio cable for audio. The separate cables attach to the Phoenix connector at the loudspeaker as shown in the Figure 4. Cable runs longer than 150 feet for DC power require cable gauges larger than 18 AWG; for more information, see "Cable Lengths and Cable Gauges for UP-4XP Loudspeakers" on page 13.

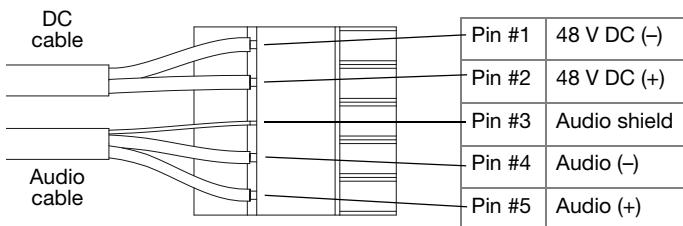


Figure 4: Separate Cables for DC Power and Balanced Audio

 **NOTE:** For more information about cable assembly and pin-outs, see Appendix B, "Phoenix and EN3 Cable Assembly."

CHAPTER 3: POWERING UP-4XP LOUDSPEAKERS

CONNECTING UP-4XP LOUDSPEAKERS TO THE MPS-488HP EXTERNAL POWER SUPPLY

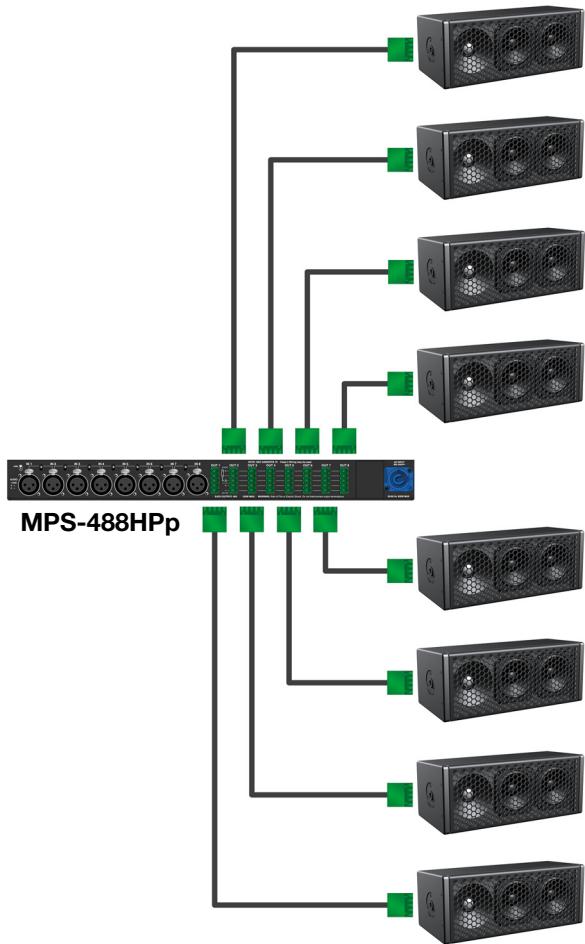
UP-4XP loudspeakers require a Meyer Sound 48 V DC external power supply, such the MPS-488HP. The single-space 19-inch rack unit receives eight channels of balanced audio from its XLR female Channel Inputs and routes the audio, along with 48 V of DC power, to its eight Channel Outputs. The Channel Outputs, which are available as either Phoenix 5-pin male connectors or SwitchCraft EN3 5-pin female connectors, can deliver DC power to up to eight UP-4XP loudspeakers. Cable lengths up to 150 feet for DC power are possible when using 18-AWG wire, with just 1 dB of loss in peak SPL. Longer cable runs are possible for moderate applications that don't drive the loudspeakers to maximum output, or for installations with heavier wire gauges. The use of composite multiconductor cables (such as Belden 1502 or equivalent) allows a single cable to carry both DC power and balanced audio to the UP-4XPs.

 **TIP:** For complete information on using the MPS-488HP external power supply, refer to the *MPS-488HP Operating Instructions*.

To connect UP-4XP loudspeakers to the MPS-488HP:

1. Power off the MPS-488HP.
2. Connect audio sources (from a mixer or processor) to the MPS-488HP Channel Inputs. Use balanced XLR cables.
3. Use the MPS-488HP Link switches to route Channel Inputs to the desired Channel Outputs. For information on the MPS-488HP Link switches, refer to the *MPS-488HP Operating Instructions*.
4. Connect the UP-4XP loudspeakers to the MPS-488HP Channel Outputs. Use composite cables (such as Belden 1502 or equivalent) wired for both DC power and balanced audio and outfitted with the appropriate connectors.

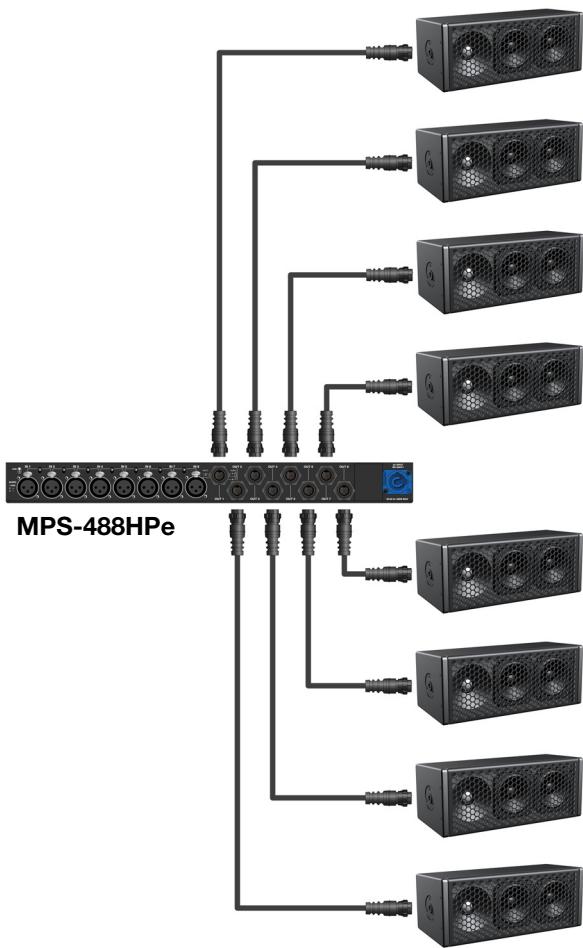
- When connecting UP-4XP loudspeakers equipped with Phoenix connectors to the MPS-488HP power supply, use Phoenix 5-pin male to Phoenix 5-pin female cables.



MPS-488HPp with Eight UP-4XP Loudspeakers

 **TIP:** You can use two separate cables for UP-4XP loudspeaker connections: a 2-conductor cable for DC power and a 3-conductor cable for balanced audio, both attached to a single Phoenix connector on each cable end. This allows you to use a larger gauge for the DC cable so you can achieve longer cable runs (see "Cable Lengths and Cable Gauges for UP-4XP Loudspeakers" on page 13).

- When connecting UP-4XP loudspeakers equipped with EN3 connectors to the MPS-488HPe power supply, use EN3 5-pin male to EN3 5-pin female cables.



MPS-488HPe with Eight UP-4XP Loudspeakers

- To join two EN3 cables, one with an EN3 5-pin male cable mount connector to one with an EN3 5-pin female cable mount connector, use an EN3 5-pin female-to-male cable coupler (PN 28.163.033.01).



CAUTION: Make sure UP-4XP loudspeaker cables are wired correctly. For details on assembling loudspeaker cables, see Appendix B, "Phoenix and EN3 Cable Assembly."

- Power on the MPS-488HP and monitor the LEDs on the front panel to verify connections. For information on the MPS-488HP LEDs, refer to the *MPS-488HP Operating Instructions*.
- Check the LEDs on the UP-4XP rear panels and verify they are green (ready to reproduce audio).
- Enable output from the audio sources (from the mixer or processor) connected to the MPS-488HP.

CONNECTING UP-4XP LOUDSPEAKERS TO THE MPS-488 EXTERNAL POWER SUPPLY

The original MPS-488 was designed for use with the MM-4XP miniature loudspeaker. While the MPS-488 can power up to eight MM-4XP loudspeakers, it can only power up to four UP-4XP loudspeakers (due to the UP-4XP's higher power requirements and current draw).

Because the MPS-488 can power a maximum of four UP-4XP loudspeakers, the loudspeakers should only be connected to Channel Outputs 1, 3, 5, and 7. Do not use the even-numbered channel outputs.



MPS-488P Power Supply



MPS-488E Power Supply

 **NOTE:** These guidelines do not apply to the MPS-488HP external power supply, which can drive up to eight UP-4XP loudspeakers.

 **NOTE:** The MPS-488HP external power supply replaces the MPS-488 model, which was originally designed for use with MM-4XP loudspeakers. The MPS-488 is also compatible with UP-4XP loudspeakers and can drive up to four units (using every other Channel Output).



CHAPTER 4: QUICKFLY RIGGING

The UP-4XP includes top and bottom mounting plates with 3/8-16 or metric M10 threaded nuts. QuickFly mounting options include the MUB-UP4 U-bracket, MYA-UP4 cradle-style yoke, and MSA-UPM pole-mount adaptor.

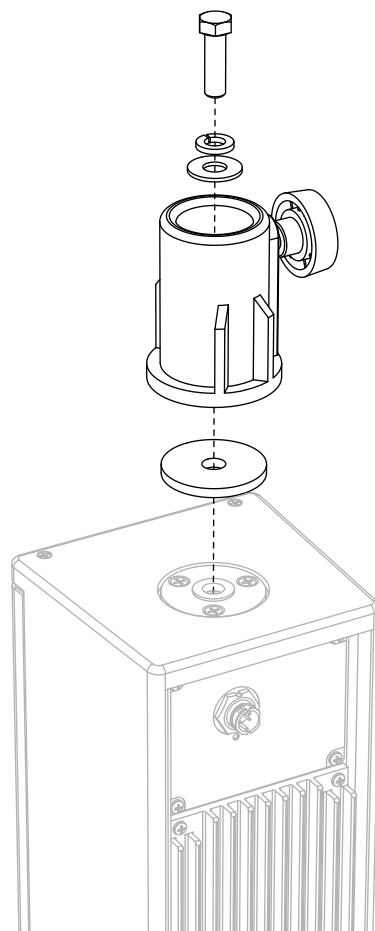
IMPORTANT SAFETY CONSIDERATIONS

When installing Meyer Sound loudspeakers, the following precautions should always be observed:

- All Meyer Sound products must be used in accordance with local, state, federal, and industry regulations. It is the owner's and user's responsibility to evaluate the reliability of any rigging or mounting method for their application. Rigging should only be carried out by experienced professionals.
- Use mounting and rigging hardware that has been rated to meet or exceed the weight being hung.
- Make sure to attach mounting hardware to the building's structural components (studs or joists), and not just to the wall surface. Verify that the building's structure and the anchors used for the installation will safely support the total weight of the mounted loudspeakers.
- Use mounting hardware appropriate for the surface where the loudspeaker will be installed.
- Make sure bolts are tightened securely. Meyer Sound recommends using Loctite® on bolt threads and safety cables.
- Inspect mounting and rigging hardware regularly. Immediately replace any worn or damaged components.

POLE-MOUNTING UP-4XP LOUDSPEAKERS

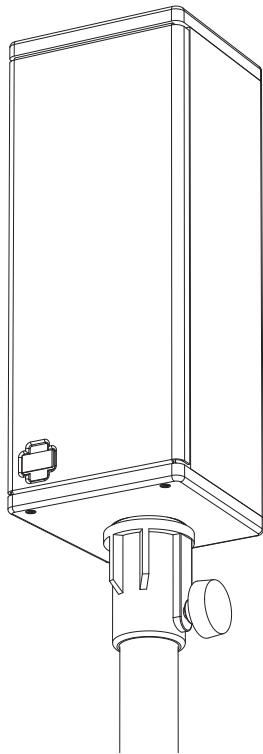
You can mount the UP-4XP on a third-party loudspeaker stand with the optional MSA-UPM stand adapter (PN 40.086.013.01). The MSA-UPM kit includes both 3/8-16 and M10 hardware. To install the adapter, attach the adhesive-backed cork washer to the stand (not to the loudspeaker), and secure the stand to the loudspeaker with the bolt and washer.



UP-4XP with MSA-UPM Stand Adapter (Upside Down)



CAUTION: When mounting the UP-4XP on a pole, make sure the pole has been rated to support the full weight of the loudspeaker. Observe all safety precautions specified by the pole manufacturer.

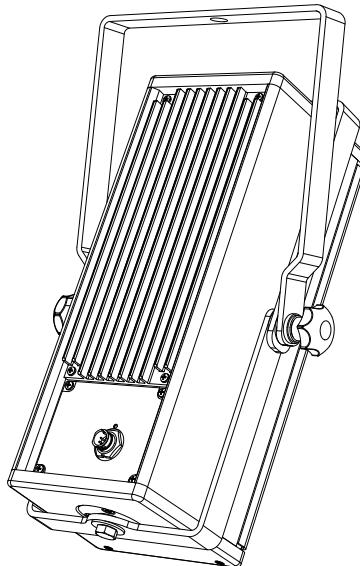


MYA-UP4 Mounting Yoke

TIP: Meyer Sound offers two kits for mounting the UP-4XP on top of the UMS-1P subwoofer. The MPS-UMS pole mount kit (PN 40.086.014.02) includes a 43-inch (1090 mm), 3/8-inch (35 mm) diameter pole assembly. The MPK-UMS pole mount kit (PN 40.086.014.01) includes the same pole assembly along with the MSA-UPM stand adapter.

MYA-UP4 MOUNTING YOKE

The MYA-UP4 mounting yoke suspends a single UP-4XP loudspeaker and allows a wide range of horizontal and vertical adjustment. The MYA-UP4 is available in two kits: one with 3/8-16 hardware (PN 40.201.039.01), and one with M10 hardware (PN 40.201.039.02).



MYA-UP4 Mounting Yoke

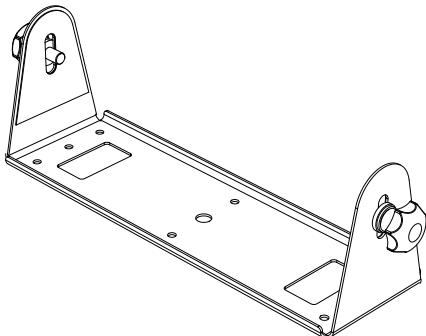
To install the yoke, attach it to the loudspeaker's top and bottom end plates with the included bolts and washers. Tighten the bottom bolt first and then the top. A "C" or "G" hanging clamp and steel safety cable (not included) are required to suspend the MYA-UP4 mounting yoke.



NOTE: The top bar of MYA-UP4 mounting yoke accommodates hanging clamps with standard 1/2-inch or 12 mm bolts.

MUB-UP4 U-BRACKET

The MUB-UP4 U-bracket mounts the UP-4XP on walls, ceilings, and floors. The MUB-UP4 is available in two kits: one with 3/8-16 knobs (PN 40.201.069.01), and one with M10 knobs (PN 40.201.069.02).

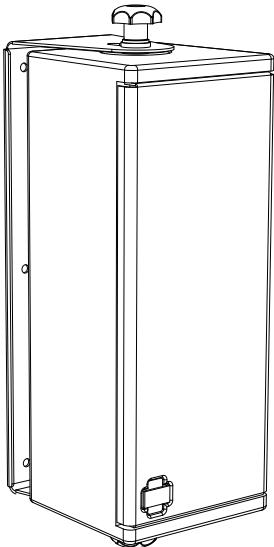


MUB-UP4 U-Bracket

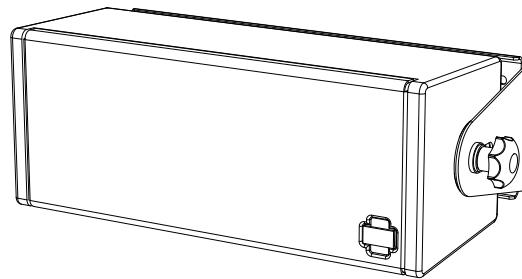
To install the U-bracket, secure the loudspeaker to the bracket with the included knobs and washers. The U-bracket's adjustment slot lets you adjust how close the UP-4XP is located to the mounting surface and at what angle the loudspeaker will be positioned.

Wall-Mounting with the MUB-UP4

The MUB-UP4 U-bracket lets you mount the UP-4XP either vertically or horizontally on a wall.



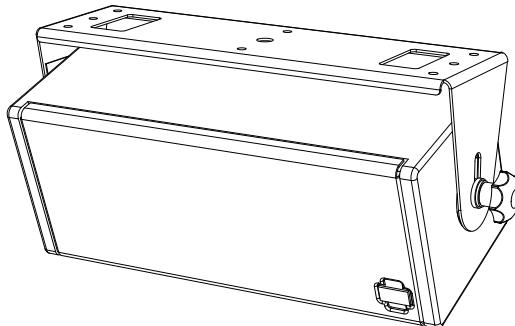
MUB-UP4, Vertical Wall Mount



MUB-UP4, Horizontal Wall Mount

Ceiling-Mounting with the MUB-UP4

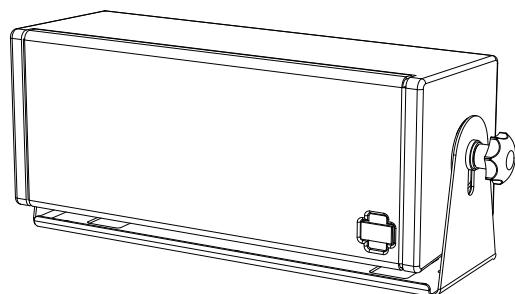
The UP-4XP can be mounted on a ceiling, underbalcony, or canopy area with the MUB-UP4 U-bracket.



MUB-UP4, Ceiling-Mounted

Floor-Mounting with the MUB-UP4

The UP-4XP can be mounted on a floor or stage lip (for front-fill applications) with the MUB-UP4 U-bracket.



MUB-UP4, Floor-Mounted

APPENDIX A: UP-4XP ACCESSORIES

UP-4XP ACCESSORIES

The following UP-4XP accessories are available from Meyer Sound.

UP-4XP Accessories

Part Number	Accessory	Notes
09.205.001.01	MPS-488HPp external power supply (with US power cord)	Channel Outputs equipped with Phoenix 5-pin male connectors; use with UP-4XPs equipped with Phoenix connectors
09.205.001.02	MPS-488HPp external power supply (with CE power cord)	
09.205.001.03	MPS-488HPe external power supply (with US power cord)	Channel Outputs equipped with EN3 5-pin female connectors; use with UP-4XPs equipped with EN3 connectors
09.205.001.04	MPS-488HPe external power supply (with CE power cord)	
40.201.069.01	MUB-UP4X U-bracket	With 3/8-16 hardware.
40.201.069.02	MUB-UP4X U-bracket	With M10 hardware.
40.201.039.01	MYA-UP4 mounting yoke	With 3/8-16 hardware.
40.201.039.02	MYA-UP4 mounting yoke	With M10 hardware.
40.086.013.01	MSA-UPM stand adapter	With 3/8-16 and M10 hardware; pole assembly not included
40.086.014.02	MPS-UMS pole mount kit	43-inch (1090 mm), 3/8-inch (35 mm) diameter pole assembly for mounting loudspeakers on top of UMS-1P subwoofer; stand adapter not included
40.086.014.01	MPK-UMS pole mount kit	43-inch (1090 mm), 3/8-inch (35 mm) diameter pole assembly with MSA-UPM stand adapter



NOTE: The MPS-488HP external power supply replaces the MPS-488 model, which was originally designed for use with MM-4XP loudspeakers. The MPS-488 is also compatible with UP-4XP loudspeakers and can drive up to four units (using every other Channel Output).

PHOENIX AND EN3 CABLE CONNECTORS AND ADAPTERS

The following UP-4XP cable connectors and adapters are available from Meyer Sound.

Phoenix and EN3 Cable Connectors and Adapters

Part Number	Connector/Adapter	Use
484.065	Phoenix 5-pin female cable mount connector	Connects to UP-4XPs equipped with Phoenix connectors, and MPS-488HPp Channel Outputs
468.069	EN3 5-pin female cable mount connector	Connects to UP-4XPs equipped with EN3 connectors
468.071	EN3 5-pin male cable mount connector	Connects to MPS-488HPe Channel Outputs
468.072	EN3 5-pin female inline cable adapter	Connects to EN3 5-pin male cable mount connector
468.073	EN3 5-pin male inline cable adapter	Connects to EN3 5-pin female cable mount connectors
28.163.033.01	Cable coupler EN3 5-pin female-to-male	Joins two cables: one with an EN3 5-pin male cable mount connector to one with an EN3 5-pin female cable mount connector

PHOENIX AND EN3 LOUDSPEAKER CABLES

The following Phoenix and EN3 cables are available from Meyer Sound and can be used to connect UP-4XPs to MPS-488HPs.

Phoenix and EN3 Loudspeaker Cables

Part Number	Cable	Color	Coating	Length
524.014	Bulk (no connectors)	Black	Regular	500 ft spool
524.015	Bulk (no connectors)	White	Plenum	500 ft spool
28.163.009.01	EN3 5-pin female to pigtail	Black	Regular	10 ft
28.163.009.11	EN3 5-pin female to pigtail	White	Plenum	10 ft
28.163.009.21	EN3 5-pin female to EN3 5-pin male	Black	Regular	10 ft
28.163.009.22				20 ft
28.163.009.23				30 ft
28.163.009.24				50 ft
28.163.009.25				100 ft
28.163.009.26				150 ft
28.163.009.31				10 ft
28.163.009.32	EN3 5-pin female to EN3 5-pin male	White	Plenum	20 ft
28.163.009.33				30 ft
28.163.009.34				50 ft
28.163.009.35				100 ft
28.163.009.36				150 ft
28.163.033.01	Cable coupler EN3 5-pin female-to-male (joins two cables: one with an EN3 5-pin male cable mount connector to one with an EN3 5-pin female cable mount connector)			
28.163.009.41	EN3 5-pin female to Phoenix 5-pin female	Black	Regular	10 ft
28.163.009.42				20 ft
28.163.009.43				30 ft
28.163.009.44				50 ft
28.163.009.45				100 ft
28.163.009.46				150 ft
28.163.009.51	EN3 5-pin female to Phoenix 5-pin female	White	Plenum	10 ft
28.163.009.52				20 ft
28.163.009.53				30 ft
28.163.009.54				50 ft
28.163.009.55				100 ft
28.163.033.01				150 ft



NOTE: Bulk cables use Belden 1502R (regular) or Belden 1502P (plenum) cable. Belden 1502 is a composite cable comprised of two 18 AWG wires for DC power, two 22 AWG wires for balanced audio, and one 24 AWG wire for audio shield. This single cable can deliver both DC power and balanced audio to loudspeakers at cable runs of up to 150 feet with only 1 dB of loss in peak SPL. Longer cable runs are possible with heavier gauges for DC power and separate cables for balanced audio. For more information, see “UP-4XP Current Draw and Cable Requirements” on page 13.

APPENDIX B: PHOENIX AND EN3 CABLE ASSEMBLY

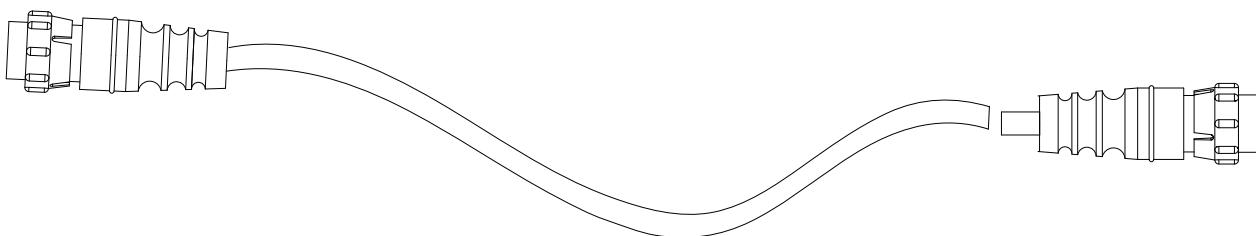
CAUTION: When wiring UP-4XP loudspeaker cables, it is extremely important that each pin be wired correctly. Make sure the 48 V DC from the external power supply is wired directly (and only) to the 48 V DC pins on the UP-4XP loudspeaker connector, and that the polarity is observed (negative to negative, positive to positive) to avoid damage to the loudspeaker. In addition, make sure that audio pins are wired correctly; polarity reversals for audio signals affect system performance.

ASSEMBLING EN3-TO-EN3 LOUDSPEAKER CABLES

When connecting UP-4XP loudspeakers equipped with EN3 connectors to the MPS-488HPe power supply, you need an EN3 5-pin female to EN3 5-pin male cable. The following procedure documents how to assemble this cable. If you are starting with an EN3-to-pigtail cable, you can skip step 5 in this procedure.



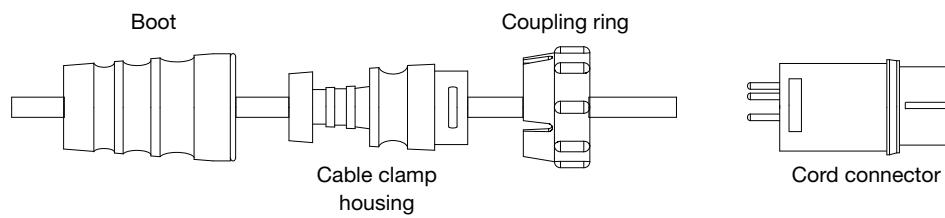
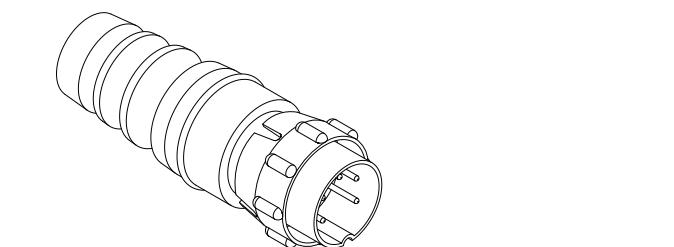
NOTE: Cable mount connectors cannot connect to other cable mount connectors. Cable mount connectors can only connect to panel mount connectors (like those on the UP-4XP and MPS-488HPe) or inline connectors. To extend cables with EN3 connectors on both ends you can use an EN3 5-pin female-to-male cable coupler.



Assembled EN3-to-EN3 Cable

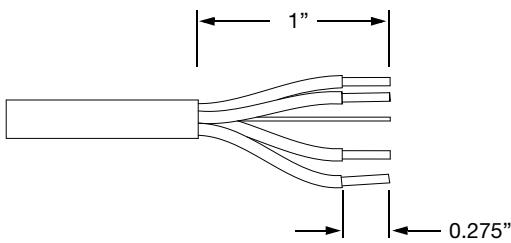
To assemble an EN3-to-EN3 loudspeaker cable:

1. Disassemble the EN3 5-pin male connector and feed one end of the cable through the boot, cable clamp housing, and coupling ring.

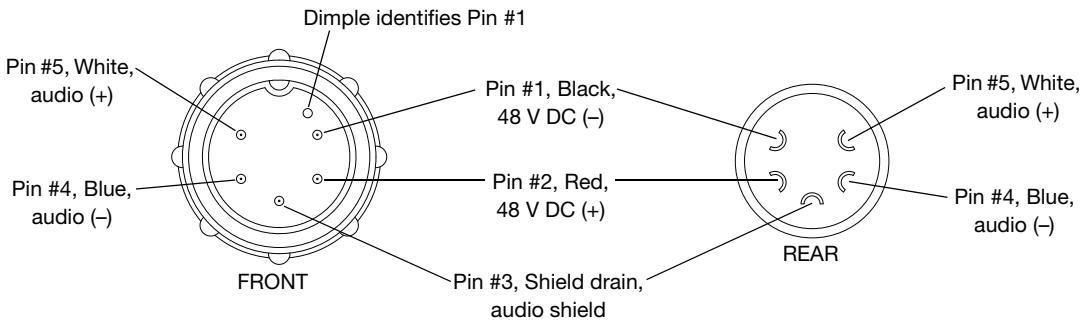


Disassembled EN3 5-Pin Male Cable Mount Connector

2. If the cable has not been stripped, strip the outer shielding 1 inch and then strip the black, red, blue, and white wires .275 inch.



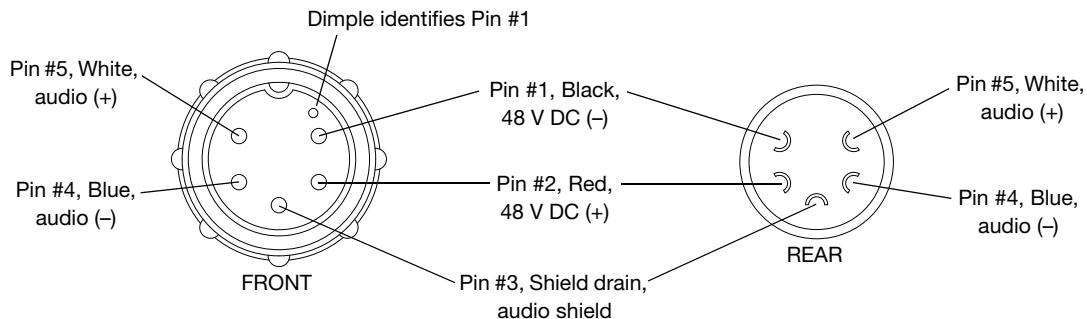
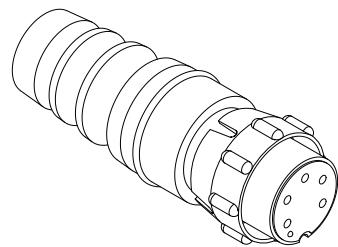
3. Solder the five exposed conductors to the five pins on the EN3 cord connector using the following wiring scheme.



4. Reassemble the EN3 5-pin male connector:

- Align the coupling ring's side notches with the cord connector's side notches and slide the couple ring onto the cord connector.
- Carefully insert the end of the cable clamp housing into the cord connector until it locks into place. Snap the cable clamps in the cable clamp housing into their compartments.
- Slide the boot forward so it covers the cable clamp housing completely.

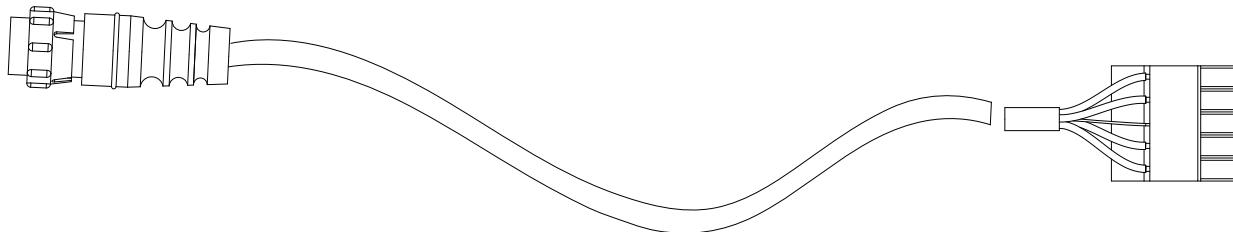
5. Repeat the previous steps to attach the EN3 5-pin female connector to the other end of the cable.



Pin Destinations for EN3 5-Pin Female Cable Mount Connector

ASSEMBLING EN3-TO-PHOENIX LOUDSPEAKER CABLES

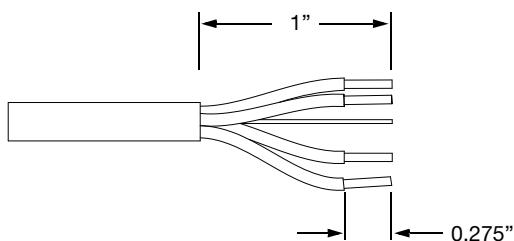
When connecting UP-4XP loudspeakers equipped with EN3 connectors to the MPS-488HPp power supply, you need an EN3 5-pin female to Phoenix 5-pin female cable. The following procedure documents how to assemble this cable. If you are starting with an EN3-to-pigtail cable, you can skip steps 4–7 in this procedure.



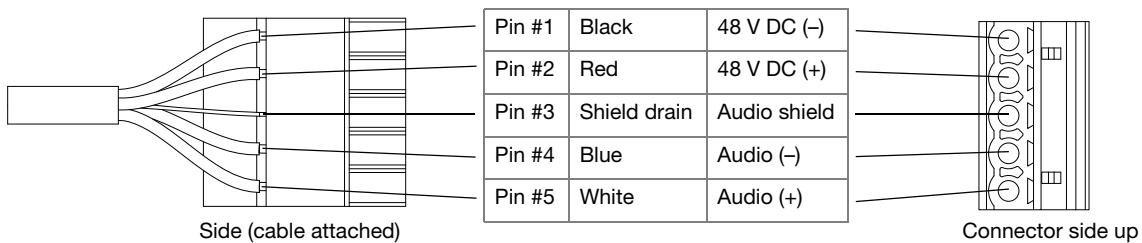
Assembled EN3-to-Phoenix Cable

To assemble an EN3-to-Phoenix cable:

1. If cable has not been stripped, strip the outer shielding 1 inch and then strip the black, red, blue, and white wires .275 inch.

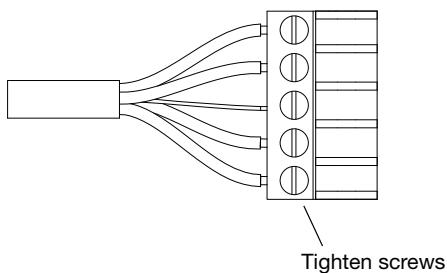


2. Insert the five exposed conductors into the five cable holes in the Phoenix connector using the following wiring scheme.

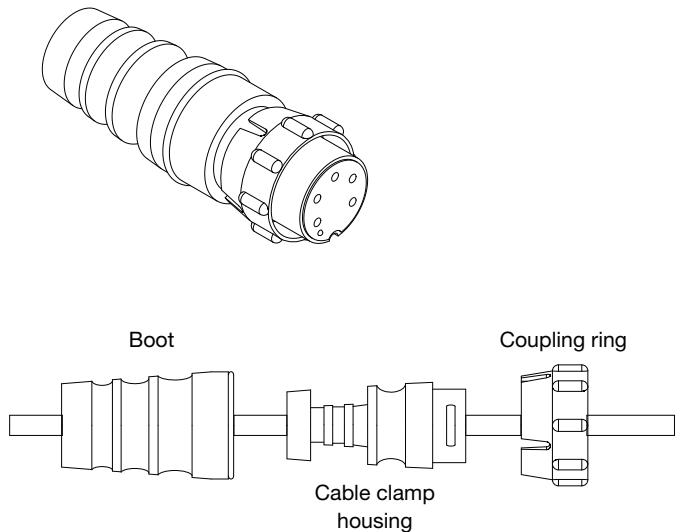


Phoenix 5-Pin Female Cable Mount Connector

3. Secure the conductors by tightening the five screws in the Phoenix conductor.



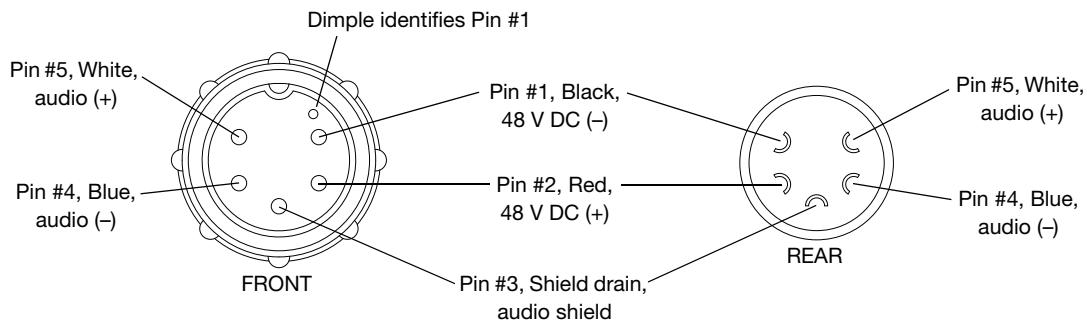
4. Disassemble the EN3 5-pin female connector and feed one end of the cable through the boot, cable clamp housing, and coupling ring.



Disassembled EN3 5-Pin Female Cable Mount Connector

5. If the EN3 end of the cable has not been stripped, strip the outer shielding 1 inch and then strip the black, red, blue, and white wires .275 inch.

6. Solder the five exposed conductors to the five pins on the EN3 cord connector using the following wiring scheme.



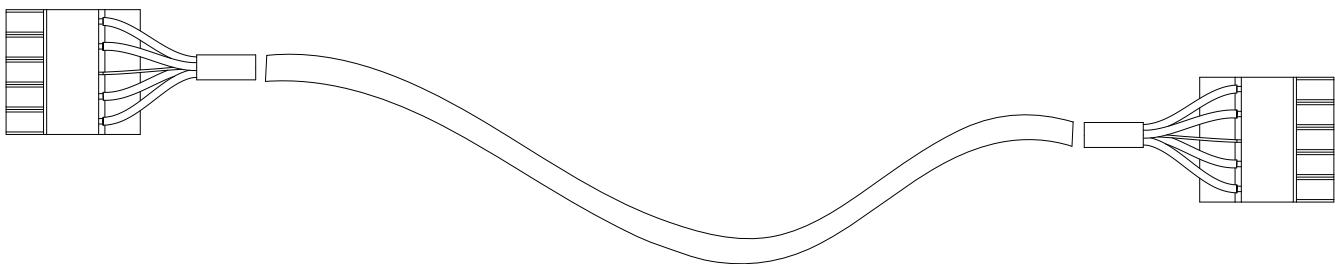
Pin Destinations for EN3 5-Pin Female Cable Mount Connector

7. Reassemble the EN3 5-pin female connector:

- Align the coupling ring's side notches with the cord connector's side notches and slide the couple ring onto the cord connector.
- Carefully insert the end of the cable clamp housing into the cord connector until it locks into place. Snap the cable clamps in the cable clamp housing into their compartments.
- Slide the boot forward so it covers the cable clamp housing completely.

ASSEMBLING PHOENIX-TO-PHOENIX LOUDSPEAKER CABLES

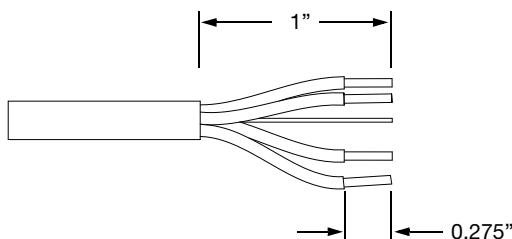
When connecting UP-4XP loudspeakers equipped with Phoenix connectors to the MPS-488HPp power supply, you need a Phoenix 5-pin female to Phoenix 5-pin female cable. The following procedure documents how to assemble this cable.



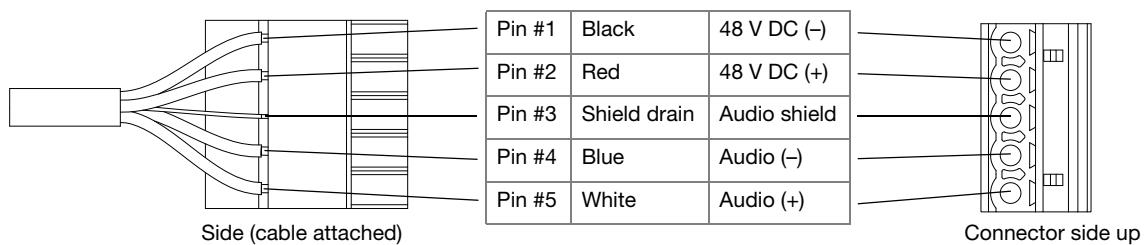
Assembled Phoenix-to-Phoenix Cable

To assemble a Phoenix-to-Phoenix cable:

1. If the cable has not yet been stripped, strip one end of the cable. Strip the outer shielding by 1 inch and then strip the black, red, blue, and white wires by .275 inch.

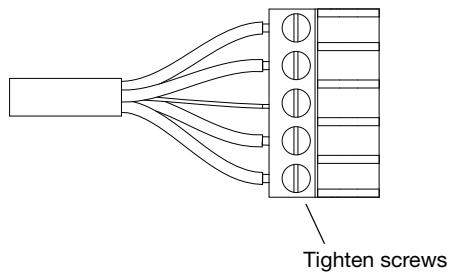


2. Insert the five exposed conductors, from one end of the cable, into the five cable holes in one of the Phoenix connectors. Use the following wiring scheme.



Phoenix 5-Pin Female Cable Mount Connector

3. Secure the conductors by tightening the five screws in the Phoenix connector.



4. Repeat the previous steps and attach the other end of the cable to the other Phoenix connector.
5. Verify the wiring polarity is correct for both connectors.

APPENDIX C: WEATHER PROTECTION

UP-4XP LOUDSPEAKERS WITH WEATHER PROTECTION

A weather-protected version of the UP-4XP with a sealed EN3 connector is available for fixed, outdoor installations. The weather-protected UP-4XP differs from the normal model in that the orientation of the loudspeaker is flipped and its rear panel connector are located at the top instead of the bottom.



Weather-Protected UP-4XP, Rear View

Installing Weather-Protected UP-4XP Loudspeakers

The weather-protected UP-4XP can be mounted vertically or horizontally but must be mounted with a 0-degree tilt, or preferably with downtilt, to ensure the loudspeaker's electronics are shielded from the elements.



Weather-Protected UP-4XP, Front View

APPENDIX D: UP-4XP SPECIFICATIONS

UP-4XP Specifications

ACOUSTICAL	
Operating Frequency Range	66 Hz – 18 kHz Note: Recommended maximum operating frequency range. Response depends on loading conditions and room acoustics.
Frequency Response	72 Hz – 17.5 kHz ± 4 dB Note: Measured free-field with pink noise at 1 meter, 1/3rd octave resolution.
Maximum Peak SPL	121 dB Note: Measured free-field with music, referred to 1 meter.
Dynamic Range	> 105 dB Note: Taken from peak SPL, referred to A-wtd noise floor.
Phase Response	360 Hz – 12 kHz ± 45 °
Coverage	100° symmetrical
Acoustical Crossover	1.5 kHz Note: At this frequency, the transducers produce equal sound pressure levels.
TRANSDUCERS	
Low Frequency	Two 4" low-frequency cone driver
High Frequency	One 1" metal dome tweeter
CONNECTOR	
Audio/Power Connector	Phoenix 5-pin male or EN3 5-pin male (3 pins for balanced audio, 2 pins for DC power)
Power Wiring	Pin 1: 48 V DC – Pin 2: 48 V DC +
Audio Wiring	Pin 3: Chassis/earth through 220 k Ω , 1000 pF, 15 V clamp network to provide virtual ground lift at audio frequencies Pin 4: Signal – Pin 5: Signal +
AUDIO INPUT	
Type	Differential, electronically balanced
Maximum Common Mode Range	± 5 V DC
Input Impedance	10 k Ω differential between pins 4 (–) and 5 (+)
DC Blocking	Differential DC blocking up to the maximum common mode voltage
CMRR	>50 dB, typically 80 dB (50 Hz – 500 Hz)
RF Filter	Common mode: 425 kHz Differential mode: 142 kHz
TIM Filter	<80 kHz, integral to signal processing
Nominal Input Sensitivity	–2.0 dBV (0.80 V rms, 1.12 V peak) continuous average is typically the onset of limiting for noise and music
Input Level	Audio source must be capable of producing +16 dBV (6.3 V rms, 9.0 V peak) into 600 Ω to produce the maximum peak SPL over the operating bandwidth of the loudspeaker
AMPLIFIER	
Amplifier Type	Three-channel (class D)

UP-4XP Specifications

Output Power	500 W total for all three channels Note: Wattage rating based on the maximum unclipped burst sine-wave rms voltage the amplifier will produce into the nominal load impedance.
THD, IM TIM	<.02%
Load Capacity	4 Ω each low channel, 8 Ω high channel
Cooling	Convection
DC POWER	
Voltage Requirement	48 V DC
Current Draw	Note: At 48 V DC.
Idle Current	0.23 A rms
Maximum Long-Term Continuous Current	1.00 A rms
Burst Current	4.05 A rms
Ultimate Short-Term Peak Current	4.50 A peak
Inrush Current	< 4.0 A peak
PHYSICAL	
Enclosure	Premium birch plywood
Finish	Black textured
Protective Grille	Powder-coated, hex-stamped steel with black mesh screen
Rigging	Top and bottom plates available with 3/8"-16 or M10 threads
Dimensions	13.84" W x 5.54" H x 5.25" (352 mm x 141 mm x 133 mm)
Weight	12.2 lbs (5.53 kg)
ENVIRONMENTAL	
Operating Temperature	0° C to +45° C
Non Operating Temperature	<-40° C or >+75° C
Humidity	To 95% at 35° C
Operating Altitude	To 4600 m (15,000 ft)
Non operating Altitude	To 95% at 35° C
Shock	30 g 11 msec half-sine on each of 6 sides
Vibration	10 Hz – 55 Hz (0.010 m peak-to-peak excursion)

UP-4XP COMPLIANCE

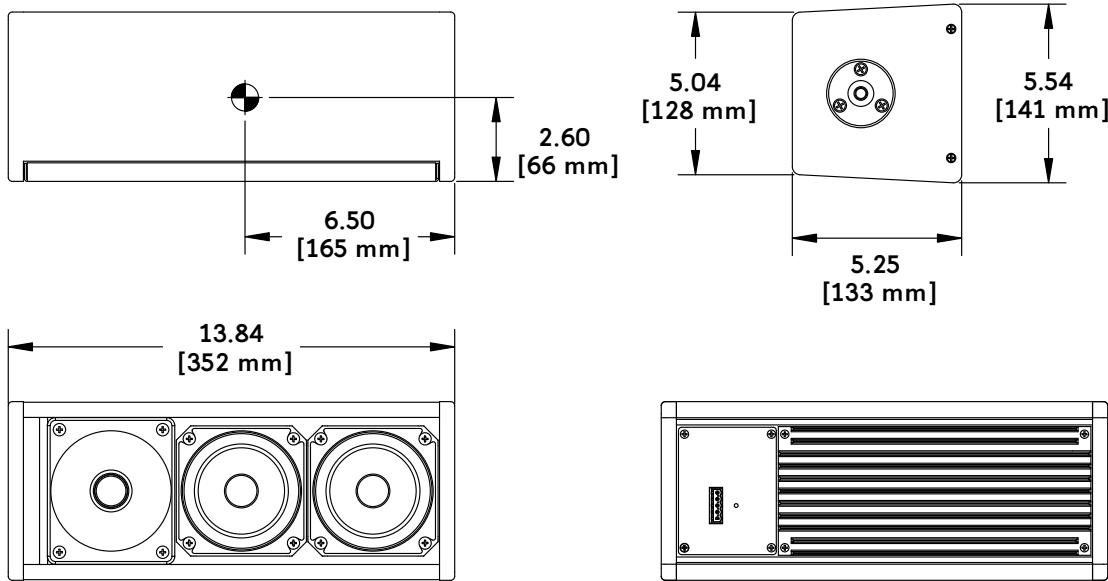


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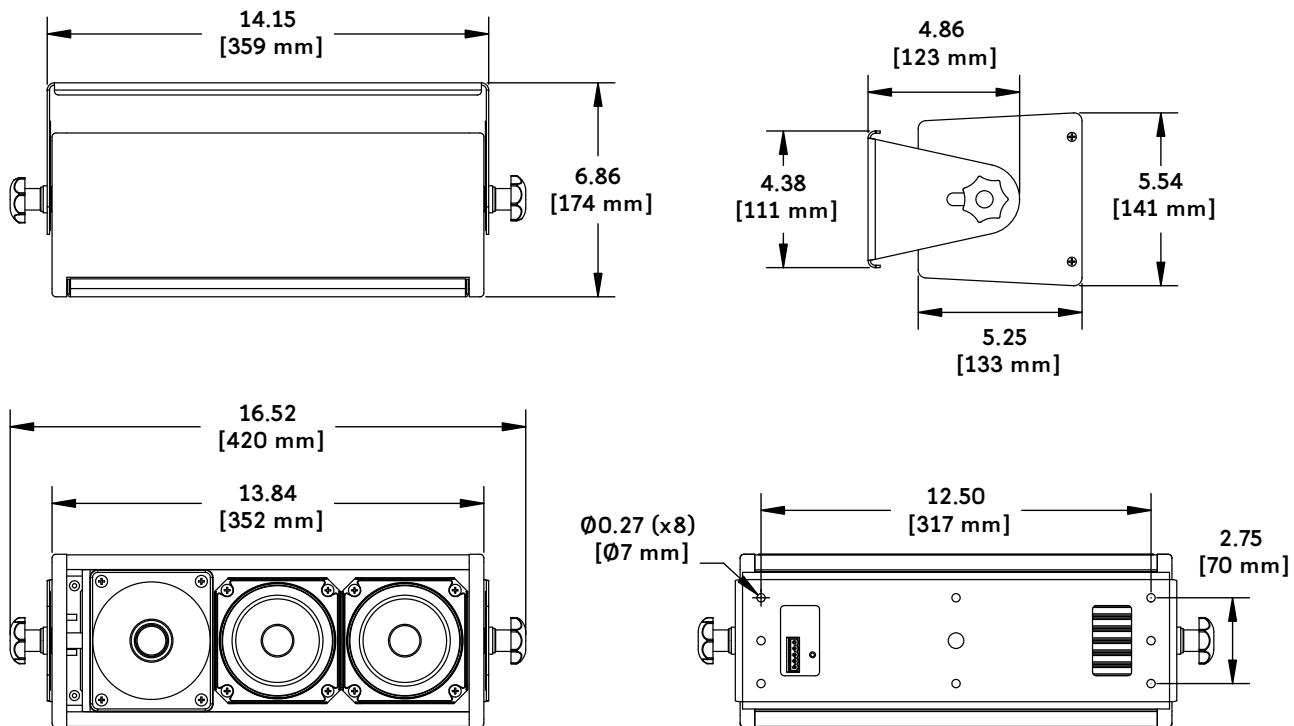


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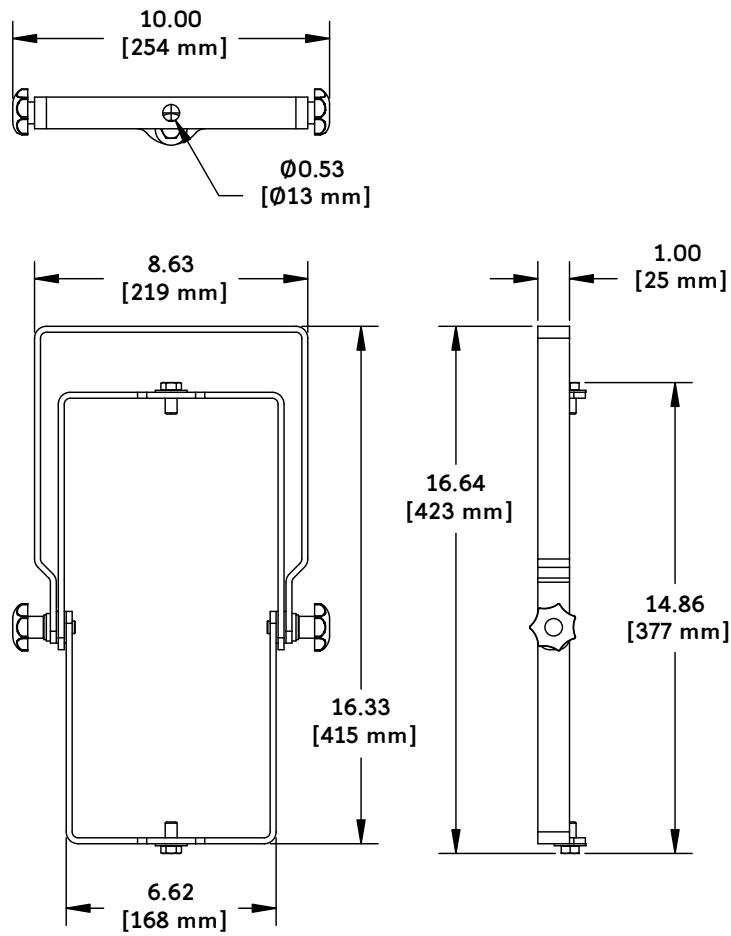
UP-4XP DIMENSIONS



UP-4XP Dimensions



UP-4XP with MUB-UP4 U-Bracket Dimensions



MYA-UP4 Mounting Yoke Dimensions



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